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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,801	07/30/2003	Naoto Abe	00862.002955.1	7926

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EXAMINER
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WU, XIAO MIN

ART UNIT	PAPER NUMBER
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2629

DATE MAILED: 04/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/629,801	ABE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	XIAO M. WU	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 32-37,39-41,44 and 47-49 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 32-37,39-41,44 and 47-49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/29/2006 has been entered.

### ***Double Patenting***

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 32-37, 39-41, 44, 47-49 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-11 of U.S. Patent No. 6,839,054.

Although the conflicting claims are not identical, they are not patentably distinct from each other

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because of the following reasons. The side by side comparison between two most representative claims are illustrated as follows:

Claim 11 of US Patent No. 6,839,054	Claim 33 of the instant application
11. An image display apparatus comprising: a plurality of display devices wired in a matrix through a plurality of scanning signal wirings and a plurality of modulated signal wirings;	33. An image display apparatus comprising: a plurality of display devices wired in a matrix through a plurality of scanning signal wirings and a plurality of modulated signal wirings; and
a driving circuit for applying a modulated signal having a pulsewidth corresponding to an image signal to each of said plurality of modulated signal wirings;	a driving circuit configured to apply a modulated signal having a modulated pulsewidth to each of said plurality of modulated signal wirings
a switching circuit provided to each of the modulated signal wirings, adapted to change a signal level of the modulated signal in discrete decrements from a predetermined level of a display state to a predetermined level of a non-display state by way of an intermediate level between the predetermined level of a display state and the predetermined level of a non-display state; and	wherein a signal level of the modulated signals corresponding to substantially all luminance which are designated by image signals is changed from a level corresponding to a display state to a level corresponding to a no- display state via an intermediate level,.
a circuit for determining the operation states of the plurality of charge paths in accordance with levels of signals supplied to said signal wirings adjacent to a wiring connected to a controlled charge path.	wherein the modulated signals corresponding to substantially all luminance do not include a modulated signal corresponding to the image signal for designating the non-display state

From the comparison above, it is noted that claim 33 is broadening from claim 11 since claim 33 does not require "a circuit for determining the operation states of the plurality of charge paths in accordance with levels of signals supplied to said signal wirings adjacent to a wiring

connected to a controlled charge path". However, it would have been obvious to one of ordinary skill in the art to realize that it is not necessary including a plurality of charge paths in accordance with levels of signals because a single charge path can provide different level of signals from the data column.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 32-37, 39-41, 44, 47-49 are rejected under 35 U.S.C. 102(b) as being anticipated by Amano (US Patent No. 4,021,607).

As to claims 32, Amano discloses an image display apparatus comprising: a plurality of display devices (1, Fig. 5) wired in a matrix through a plurality of scanning signal wirings (X1-X5, Fig. 5) and a plurality of modulated signal wirings (A1 to D4, Fig. 5); and a driving circuit (Fig. 5) configured to apply modulated signal having a pulsewidth (see Fig. 9) to each of said plurality of modulated signal wirings, wherein the driving circuit (Fig. 5) has a plurality of charge paths (A1 to D4) connected to each of the plurality of modulated signal wirings, wherein the plurality of charge paths (A1 to D1) are connected in parallel to each of the plurality of modulated signal wirings, and the number of charge paths that are driven is changed in a time period for applying one modulated signal to the one display device (see Fig. 9).

As to claims 33, 44, Amano discloses an image display apparatus comprising: a plurality of display devices (1, Fig. 5) wired in a matrix through a plurality of scanning signal wirings

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(X1-X5, Fig. 5) and a plurality of modulated signal wirings (A1 to D4, Fig. 5); and a driving circuit (Fig. 5) configured to apply modulated signal having a pulsewidth (see Fig. 9) to each of said plurality of modulated signal wirings, wherein a signal level of the modulated signals corresponding to substantially all luminance (e.g. levels 1-15 as shown in Fig. 9) which are designated by image signals is changed from a level corresponding to a display state to a level corresponding to a non-display state via an intermediate level (see levels 3, 7, 11 and 15), wherein the modulated signals corresponding to substantially all luminance do not include a modulated signal corresponding to the image signal for designating the non-display state (e.g. level 0 is a non-display state). Amano further discloses wherein charge paths are operated in parallel in a period where some or all charge paths of the plurality charge paths are operated (see Figs. 8 and 9).

As to claims 34, 35, Amano discloses the driving circuit has a plurality of charge paths for changing a signal level of the modulated signal and at least one of the plurality of charge paths is connected to a predetermined potential (see Figs. 5 and 9).

As to claim 36, Amano discloses the plurality of charge paths have different change amounts per unit time of the signal level when the signal level is to fall (see Fig. 9).

As to claim 37, Amano discloses the operation states of the plurality of charge paths are changed by exclusively operating charge paths having different change amounts per unit time of the signal level when the signal level is to fall (see Fig. 9).

As to claim 39, Amano discloses a circuit (13, 14, 15, Fig. 5) for determining the operation states of the plurality of charge paths.

As to claim 40, Amano discloses the driving circuit comprises a rise circuit for raising a

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signal level (see level 9 and 8 of Fig. 9) and a separate fall circuit (see level 15 of Fig. 9) for causing the signal level to fall.

As to claim 41, Amano discloses each said display device comprises an electron-emitting device (see col. 2, lines 35-36).

As to claim 47, Amano discloses an image display apparatus comprising: a plurality of display devices (1, Fig. 5) wired in a matrix through a plurality of scanning signal wirings (X1-X5, Fig. 5) and a plurality of modulated signal wirings (A1 to D4, Fig. 5); and a driving circuit (Fig. 5) configured to apply modulated signal having a pulsewidth (see Fig. 9) to each of said plurality of modulated signal wirings, wherein at least one pulse signal has a first portion having a signal level to be lower than a maximum level of the pulse signal at the leading edge of the pulse signal (e.g. as shown in Fig. 9, the leading edge with dot line is increasing from zero to maximum level), and a second portion having a signal level to be lower than the maximum level at the trailing edge of the pulse signal (e.g. as shown in Fig. 9, the levels 3-7, 9-15 including a trailing edge and the level of the trailing edge is lower than the maximum level of the pulse).

As to claim 48, Amano discloses the first portion is created by the driving circuit maintaining the signal level of the pulse signal to be lower than the maximum level of a predetermined time period (e.g. delay time).

As to claim 49, Amano discloses that the signal level of the first and second portions is at the approximate level of an operation threshold level of the display device (e.g. the trailing edge is always the lowest level of the pulse waveform but greater than level 0 as shown in Fig. 9).

### Response to Arguments

6. Applicant's arguments filed 3/29/2006 have been fully considered but they are not persuasive.

With respect to newly amended claim 32, applicant argues that Amano fails to teach or suggest providing a plurality of charge paths connected in parallel to each of a plurality of modulated signal wirings, with the number of charge paths that are driven being changed in a time period for applying one modulated signal to one display device. These arguments are not persuasive. As shown in Fig. 5, Amano clearly discloses a plurality of charge paths (A1 to D4) connected in parallel to each of a plurality of modulated signal wirings. As shown in Figs. 8 and 9, Amano clearly discloses that the number of charge paths (A, B, C, D) that are driven being changed in a time period ( $t_A$ ,  $t_B$ ,  $t_C$ ,  $t_D$ ) for applying one modulated signal to one display device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to XIAO M. WU whose telephone number is 571-272-7761. The examiner can normally be reached on 6:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, RICHARD HJERPE, can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

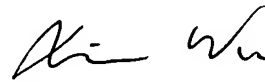


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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

x.w.

April 14, 2006



**XIAO M. WU**  
**Primary Examiner**  
**Art Unit 2629**